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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/540,026   | 01/25/2006  | Bertram Sugg         | R.304045            | 8866             |
| 2119   | 7590        | 12/04/2008           | EXAMINER            |                  |
| RONALD E. GREIGG<br>GREIGG & GREIGG P.L.L.C.<br>1423 POWHATAN STREET, UNIT ONE<br>ALEXANDRIA, VA 22314 |             |                      | GORDON, BRYAN P     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2834                |                  |
|  |             |                      | MAIL DATE           | DELIVERY MODE    |
|  |             |                      | 12/04/2008          | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/540,026

**Applicant(s)**

SUGG, BERTRAM

**Examiner**

BRYAN P. GORDON

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9, 10, 13, 14 and 29-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9, 10, 13, 14 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 29-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11 March 2008.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_



### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Specification***

2. The amendment filed 08 November 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: There is no support for a coating on the outside of the piezoelectric stack prior to any sintering as recited in claim 29; there is also no support that the coating becomes hard, smooth and impervious as recited in claim 30; also there is no support for the coating layer becoming hardened and removing portions of the sintered coating as recited in claim 31; and lastly there is no support for adding outer electrodes to the area which has had the coating removed as recited in claim 32.

Applicant is required to cancel the new matter in the reply to this Office Action.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 29-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding claim 29, wherein the coating on the piezoelectric stack has to be done before sintering the examiner does not see where this is mentioned in the application. Regarding claim 30, the applicant claims the material used as a coating becomes hard, smooth and impervious the examiner again sees no evidence of this in the specification. Regarding claim 31, the applicant claims removing portions of the sintered coating but the examiner sees no evidence of this in the specification. Regarding claim 32, the applicant claims after portions of the sintered coating have been removed, adding outer electrodes to the area which has had the coating removed is not support in the specification. The outer electrodes are clearly supported but there is no mention of them being added to the portions where the sintered coating has been removed.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 9-10, 13-14 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Schreiner (PG Pub 20020175591).

7. Considering claim 9, Schreiner teaches (Figures 1 + 3) a piezoelectric actuator (1), having a multi-layered construction of piezoelectric layers (2) interleaved with inner electrodes (3) and having an alternating contacting of the inner electrodes with outer

electrodes (4,5) the regions between the outer electrodes being provided with an insulation layer (17) comprised of the same ceramic material as the piezoelectric layers and thus having the same properties as the piezoelectric layers themselves and the insulating layer being applied to the outer surface of the piezoelectric actuator (abstract + paragraph 0006).

8. Considering claim 10, Schreiner teaches the insulating layer encloses the edges of the piezoelectric actuator (paragraph 0006).

9. Considering claim 13, Schreiner teaches the outer electrodes are attached to regions of the insulating material that have been uncovered by grinding (paragraph 0006).

10. Considering claim 14, Schreiner teaches the outer electrodes are attached to regions of the insulating material that have been uncovered by grinding (paragraph 0006).

11. Considering claim 29, Schreiner (Figures 1 + 3) teaches an apparatus made by the following steps, providing a piezoelectric stack having alternating layers of piezoelectric material and inner electrodes (3). The method of coating the outside of the stack before sintering is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

12. Considering claim 30, Schreiner teaches the piezoelectric stack is coated with the same material as is used as the piezoelectric material. The method of sintering the device so it becomes hard, smooth and impervious is not germane to the issue of

patentability of the device itself. Therefore, this limitation has not been given patentable weight.

13. Considering claim 31, the method of removing portions of the sintered coating is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given patentable weight. Furthermore, if the applicant still disagrees with this Schreiner teaches removing portions of the sintered coating (paragraph 0023).

14. Considering claim 32, Schreiner (Figure 1) teaches outer electrodes to the area which has had the coating removed in a manner such that the outer electrodes (5) make appropriate contact with the inner electrodes (3). Whether or not the portions were removed after sintered is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

### ***Response to Arguments***

15. Arguments regarding the final rejection sent out 09 January 2008 being improper have been considered and the finality of that rejection has been withdrawn. However, upon further review a rejection is made in view of Schreiner (PG Pub 20020175591). Regarding the piezoelectric and insulation layers using the same ceramic material Schreiner states (abstract) that the actuators contain a ceramic material and that the insulation skin is produced from sintering. It is well-known that sintering ceramic materials is done to assure a tight seal. Therefore, it can be concluded that the insulation skin is indeed made of the same ceramic material that the piezoelectric layers contain since the reason for the two same ceramic materials as stated in the applicant's application (paragraph 0011) is to assure a very tight, integral bond.

**Conclusion**

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN P. GORDON whose telephone number is (571)272-5394. The examiner can normally be reached on Monday-Thursday 8:00-5:30, Friday 7:30-4:00.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on 571-272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen P Leung/  
Supervisory Patent Examiner, Art Unit 2834

/B. P. G./  
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